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09/595,052	06/14/2000	Nobuhiko Nakahara	00437/LH	7928

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EXAMINER

STEPHANY, TIMOTHY J

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/595,052

Applicant(s)

NAKAHARA ET AL.

Examiner

Timothy J. Stephany

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34 and 35 is/are allowed.
- 6) ☒ Claim(s) 1-33 and 36 is/are rejected.
- 7) ☒ Claim(s) 37-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

Claims 34 and 35 are allowable over the prior art, which does not describe, disclose, nor suggest the contents therein.

Claims 37-39 are potentially allowable over the prior art, which does not describe, disclose, nor suggest the contents therein. Claims are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-33 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 1, 14, and 22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a translation of the foreign application should be submitted under 37 CFR 1.55 in reply to this action.

Specification

The disclosure is objected to because of the following informalities:

On page 2, line 20: typographical error, "contradicting property" should read "contradicting properties".

On page 12, lines 21-22: typographical error, "highlight is becomes increasingly" should read "highlight becomes increasingly".

On page 12, lines 23-25 and page 13, line 5: confused rendering, given that graininess measures increase as they become more objectionably grainy, thus "enhancing graininess" should be replaced with "reducing graininess", "moderating graininess", or some such equivalent rendering would convey the proper meaning. In addition, "Graininess indicates" should be modified to read "Low graininess indicates".

On page 27, line 18: confused wording, "can be changed to arbitrary one" should read "can be arbitrary".

On page 33, line 24: typographical error, "combining a sequences" should read "combining sequences".

On page 36, line 22: grammatical error, "with one other" should read "with one another".

On page 37, line 17-18: lack of commas, "low tone parts quite important to reproduce tones tend to" should read "low tone parts, quite important to reproduce tones, tend to".

On page 44, line 7: typographical error, for consistency "Kj" should read "kj".

On page 57, line 23, typographical error, "reproduction of tons" should read "reproduction of tones".

On page 107, lines 13-17: confused rendering, should be worded "array with neighboring thresholds having close values, in a direction coincident with a scan direction, in which the output position accuracy of the image output means is relatively low."

Appropriate correction is required.

Claim Objections

Claims 1, 14 and 22 are objected to because of the following informalities:

Unclear rendering "medium to high thresholds array" should read "medium-to-high-tone thresholds array", or any similar change that conveys the intended meaning properly in English.

Unclear rendering "medium to high tone dots" should read "medium-to-high-tone dots", to indicate that what is being specified is a certain type of dot, or any similar change that conveys the intended meaning properly in English.

Claims 5-8 and 31-32 are objected to because of the following informalities:

The phrase "medium to high threshold" should read "medium-to-high-tone threshold", or any similar change that conveys the intended meaning properly in English.

Claim 6 is objected to because of the following informalities:

The phrase "lowest tone level dots" should read "lowest-tone-level dots", to indicate that what is being specified is a certain type of dot, or any similar change that conveys the intended meaning properly in English.

Claim 10 is objected to because of the following informalities:

Typographical error "a first numbers" should read "a first number".

Claims 10 and 29 are objected to because of the following informalities:

The phrase "medium to high" should read "medium-to-high".

Claims 15 and 29 are objected to because of the following informalities:

The phrase "low tone dots" should read "low-tone dots".

Claims 18-20 are objected to because of the following informalities:

Unclear rendering "medium to high thresholds array" should read "medium-to-high-tone thresholds array", or any similar change that conveys the intended meaning properly in English.

Claim 20 is objected to because of the following informalities:

On page 97, line 9: typographical error "mans" should read "means".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1, 14, 22, and any other claims that employ the word "serial" in reference to dots, and any claims dependent upon these claims, **are rejected** under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear what is meant by the medium-to-high-tone dots being serial.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1, 14, 22, 31, 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rendering of the claim into English yields language that fails to properly define the metes and bounds of the claim. Even the amended phrase "medium-to-high-tone threshold array in a threshold range of a reference threshold array which determines thresholds in the unit threshold matrix, is an aperiodic array in the unit threshold matrix and an anisotropic array including neighboring thresholds having close values in a direction..." does not properly convey a decipherable meaning, such that it cannot be determined whether it is the medium-to-high-tone threshold array or the reference threshold array that is the one that is aperiodic or anisotropic, or whether one

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is matched with one or the other with the other. The ultimate meaning depends upon the appropriate insertion of commas into this section.

In addition, it is unclear how the use of these arrays impacts the unit threshold matrix. For example, the phrase "is an aperiodic array in the unit threshold matrix" is unclear in its intended meaning.

Claims 2-9, 15-21, 23-30, and 33 are likewise rejected by their nature of dependence upon the aforementioned rejected claims.

Claims 1-4, 10, 14-17, 22, 24-32, and any other claims that employ the word "relatively", are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A suggestion is made to remove the word from all claims in which it appears.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 36 is rejected under 35 U.S.C. 102(e) as being anticipated by Yoo ('005).

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Yoo discloses an image processor for half-toning. That this uses a half-tone cell or plane (col. 5, lines 22-25) for each color (col. 6, lines 24-26) with a threshold (col. 6, lines 10-11) and that the gamma correction is built into the ranking of pixels in the half-tone screen (col. 6, lines 11-14), and that there is an output generation (col. 6, lines 17-18).

Additional Notes

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Rylander ('168) refers to using anisotropic array for the purposes of lessening visual misregistration errors; Rylander ('886) and Li ('287) refer to lessening banding with half-toning method; Urasawa ('795), Ohshima ('512) and Yao ('733) refer to incorporating gamma correction into thresholding process; Koitabashi ('096) refers to printing with two different dot sizes; and non-patent reference (US 2003/0133161 A1) refers to compensation of misregistration errors with half-toning.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Stephany whose telephone number is 703-305-8951. The examiner can normally be reached on 8:30 am - 4:30 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


EDWARD COLES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2622